Amendments to the Specification:

Please replace the sentence on page 3, lines 28-29 with the following amended and new sentences.

"Figure 1 a illustrates a portion of a microfluidic chip used in Example 3 for determination of glucose in 50 samples.

Figure 1b is an enlarged portion of Figure 1a

Figure 1c is an enlarged post from Figure 1b"

Please replace the sentence on page 3, line 30 with the following amended sentence.

"Figure 2 shows a cross-sectional view of the microfluidic chip of Figure 1b."

Please replace the paragraph on page 10, lines 9-22 with the following amended paragraph.

"One type of flow restriction that has been found very satisfactory is a groove or a weir which extends across the inlet chamber between the inlet capillary and outlet vents for the air. For example, a groove or weir can be seen (43) in Fig. 1b. The groove or weir may contain wedge-shaped polygon features or curved geometries spaced across the chamber to further assist the uniform distribution of the liquid. Alternatively, microstructures such as those described below can provide uniform distribution of a sample liquid over an inlet chamber. When the liquid is distributed by the means described, the pressure required upstream in the inlet capillary is greater, which also affects the movement of the liquid into the downstream passageway. It should also be mentioned that the inlet chamber may not always be empty. It may contain reagents and/or filters. For example, if the inlet chamber contains glass fibers for separating red blood cells from plasma, so that they do not interfere with the analysis of plasma, this step would be carried out before the feature controlling flow of the sample across the chamber is encountered. Blood anti-coagulants may be included in the inlet chamber."

Please replace the paragraph on page 11, lines 10-18 with the following amended paragraph.

"In one preferred microstructure seen in Fig. 1a-c and Fig. 2, an array of posts 45 is disposed in reagent area 44 so that the liquid has no opportunity to pass through the inlet chamber in a straight line. The liquid is constantly forced to change direction as it passes through the array of posts 45. At the same time, the dimensions of the spaces between the posts are small enough to produce capillary forces inducing flow of the liquid. Air is purged from the reagent area as the sample liquid surges through the array of posts. Each of the posts may contain one or more wedge-shaped cutouts which facilitate the movement of the liquid as discussed in U.S. 6,296,126. The wedge-shaped cutouts 45a have a wedge angle of about 90 degrees or less and a radius of curvature at the wedge-edge smaller than 200 microns."

Please replace the paragraphs on page 16, lines 10-23 with the following amended paragraphs.

"The microfluidic device of Figures 1a-c and 2 was used to measure the glucose content of blood. Whole blood pretreated with heparin was incubated at 250°C to degrade glucose naturally occurring in the blood sample. The blood was spiked with 0, 50, 100, 200, 400, and 600 mg/μL of glucose as assayed on the YSI glucose instrument (YSI Instruments Inc.). A glucose reagent (chromagenic glucose) reagent as described in Bell U.S. 5,360,595 was coated on a nylon membrane disposed on a plastic substrate. A sample of the reagent was placed in chamber [[34]] 44 and the bottom of the device covered with Excel Sealplate (Excel Scientific Inc.).

Samples of blood containing one of the concentrations of glucose were introduced into inlet port [[30]] 40 using a 2μL capillary with plunger (Drummond Aqua). Since the inlet port is sealed when the sample is dispensed, a positive pressure is established which forces the sample into the inlet passageway [[32]] 42 and then into the reagent area [[34]] 44. The sample reacted with the reagent to provide a color change, which is then read on a spectrometer at 680nm, as corrected against a black and white standard. Air is expelled through passages 46 and exits through vent 48."